Migraines in women?
Consider hormone contribution

Migraine is a severe and debilitating headache affecting as many as 15 per cent of the population. These headaches can last up to 72 hours and are three times more likely to affect women as they are to affect men.

For some women, as many as 50 per cent in some studies, the beginning of their period also heralds the start of migraine in what can be a relentless monthly cycle of headache and nausea, severely limiting their ability to function normally.

One theory suggests migraine is the result of increased vascular reactivity in the blood vessels around the brain. For the nearly 30 per cent of people who suffer an aura, this is thought to be the result of the initial vasoconstrictor phase which can lead to quite localised neurological signs and symptoms. Following this stage, there is compensatory vasodilation which stretches the meninges and leads to the blinding headache that is all too familiar to sufferers.

Researchers have determined that fluctuations in hormone levels, in particular a sudden increase or decrease in oestrogen may be the precipitating factor in some sufferers. It is believed that these fluctuations increase vascular reactivity which in turn starts the pathway ultimately ending up as a migraine headache. Prostaglandin release also plays a role in regulation of the menstrual cycle and has been implicated in the causing of migraine.

The absolute serum level of hormone is thought not to be as important as the fluctuation. In fact, the second trimester of pregnancy sees hormone levels at their absolute physiological peak, yet most women report amelioration of symptoms and lessening frequency of their attacks. With the delivery of the placenta during the third stage, hormone levels rapidly decrease and this can precipitate a recurrence of migraines at a time when other triggers like sleep deprivation and dehydration may also be present.

Menstrual migraines typically occur two to three days prior to commencement of the period. They usually last for the first two to three days of the period and are categorised by resolution when menstruation ceases, only to occur in the next cycle.

In addition to the usual treatment for migraine such as analgesics, anti-inflammatories and triptans, women with true menstrual migraine may benefit from obliteration of the menstrual cycle and its attendant hormonal fluctuations.

Supplementation with transdermal oestrogen during the low oestrogen part of the cycle or fixed dose hormonal preparations delivering a steady level of hormone, sufficient to suppress the menstrual cycle altogether, are worth considering.

Traditional teaching recommends avoidance of the combined oral contraceptive pill in women with migraines although this is starting to be questioned. Alternatives include long-acting reversible progesterone only contraceptive implants or IUDs supplemented with low-dose daily transdermal oestrogen preparations to achieve reliable amenorrhoea.

Another alternative is a vaginal delivery system where the hormone diffuses directly into the bloodstream, so bypassing the liver and enabling a lower total dose of hormone. This route of administration also provides the theoretical benefit of not stimulating hepatic production of clotting factors, although this is not yet proven in clinical studies.

Similarly, at the time of menopause, anovulatory cycles are initially closer together before spacing out and eventually stopping. Peri menopausal women may report an increased frequency of migraines in addition to menorrhagia associated with these anovulatory cycles. The addition of replacement therapy doses of hormones may offer symptom relief in these women.

Of course the usual recommendations, precautions and evaluation of risk factors are necessary before prescription of any hormonal preparation.

For some women, however, regulation of their menstrual cycle may just help their migraines as well.

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Case Study

Mrs JS is a 35 year old referred from her neurologist for an opinion regarding an 18 month history of worsening cyclical migraines thought to be related to her menstrual cycle.

Neurological examination and investigation had been unremarkable and she received relief from sumatriptan during an acute attack but the neurologist wondered whether cycle suppression could eliminate her headaches.

She was a fit and well woman without co-morbidities, not on any regular drugs and a non-smoker and non-drinker. She had previously delivered three children vaginally, was current for smears and had regular, although increasingly heavy periods. Her husband had previously had a vasectomy and she was not taking any exogenous hormones.

Abdominal examination revealed a soft non-tender abdomen without organomegaly nor lymphadenopathy. Bimanual vaginal examination revealed a mobile, bulky and slightly tender uterus consistent with adenomyosis without any pinpoint tenderness, fixity nor tethering.

In view of her menorrhagia, a levonorgestrel-containing IUD was inserted under paracervical block with azithromycin cover in the rooms. She returned for review three months later with an ultrasound scan confirming correct placement of the device and sonographic features suggestive of mild adenomyosis. Mrs JS reported significant decrease in volume of menstrual loss but almost daily spotting. She still suffered from migraines when her period was due but felt they were shorter in duration and less severe.

She was commenced on a daily transdermal oestradiol preparation and asked to return in two months for review. At that time, her spotting had settled and she had not had a premenstrual migraine for those two months. The decision was made to stop the oestrogen and see whether the benefits would last. She came back for review in a further two months saying that although no vaginal bleeding had returned she did return to having monthly migraines.

After discussion of potential risks and benefits, Mrs JS has elected to continue using daily transdermal oestrogen in addition to her progesterone-loaded IUD to help both her menorrhagia and menstrual migraine. She remains under neurology review and the plan at this stage is to continue current therapy.